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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/718,568 | 11/24/2003 | Emanoil Surducan | 29083/41796 | 1868 |

7590 08/08/2005

Barnes & Thornburg
Suite 900
750 17th Street, N.W.
Washington, DC 20006

EXAMINER

DINH, TRINH VO

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2821

DATE MAILED: 08/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/718,568

Applicant(s)

SURDUCAN ET AL.

Examiner

Trinh Vo Dinh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment filed 06/14/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-16 is/are allowed.
- 6) ☒ Claim(s) 1,3-8 and 17-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 06/14/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Applicant's communication filed on 06/14/2005 has been carefully considered by the examiner. In view of the IDS submitted along with the amendment, a new rejection is set forth below. This action is not made final.

Information Disclosure Statement

1. It is reminded that the information disclosure statement filed February 03, 2005 fails to comply with 37 CFR 1.98(a)(1) because no PTO-1449 has been submitted. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered. The Applicant must submit a PTO-1449 in order to be considered by the Examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-8 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krenz et al (USP 5,532,708) in view of Joy et al (US 2004/0140941 of record).

With respect to claim 1, Krenz discloses, in Figs. 1-2, a dipole antenna comprising a first conductive element (24+32) superimposed a portion of and separated from a second conductive element (13+14+17+18+19) by a first dielectric layer (col. 4, lines 42-45), a first conductive via (22) connects the first and second conductive elements through the first dielectric layer wherein the first element (24+32) is a L-shaped and the second conductive element (13+14+17+18+19) is

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generally U-shaped. However, Krenz does not suggest the second conductive element including a plurality of spaced conductive strips extending transverse from adjacent ends of the legs of the U-shape. Joy discloses, in Fig. 1, a conductive element (110+120) including a plurality of spaced conductive strips (110A, 110B, 120A, 120B) extending transverse from adjacent ends of legs of an U-shape and each strip being dimensioned for a different λ_0 (paragraph [0012]). It would have been obvious to one having ordinary skill in the art to provide Chen's U-shape radiating element with spaced conductive strips as taught by Joy. Doing so would provide the antenna with a capability of operating in multi frequencies.

With respect to claim 3, 6 and 8, Krenz discloses one of the legs (32) of the L-shaped being superimposed one of the legs (17) of the U-shape (Fig. 2), the first and second conductive elements being each planar, and the antenna being omni-directional and a gain exceeding 4 dB (paragraph [0020]).

With respect to claims 4-5, Krenz discloses, in Fig. 2, the first conductive via (22) connecting the other leg (24) of the L-shape to the other leg (18) of the U-shape, and the first conductive via connecting an end of one (24) of the legs of the L-shape to one (18) of the legs of the U-shape.

With respect to claim 17, Krenz discloses first dielectric layer being a substrate (col. 4, lines 42-45), and the first and second conductive elements being printed elements on the substrate.

With respect to claims 7 and 18, Joy further discloses, in Fig. 1, each strip (110A, 110B, 120A, 120B) has a width less than $0.05 \lambda_0$ (Fig. 1) and a length of less than $0.5 \lambda_0$ (paragraph [0012]), and the plurality of strips being parallel to each other.

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With respect to claim 19, Krenz discloses, in Fig. 2, one of leg (32) of the L-shaped element is superimposed on one leg (17) of the U-shaped element and a portion of another leg (24) of the L-shaped element being superimposed on another leg (18) of the U-shaped element

Allowable Subject Matter

4. Claims 9-16 are presently allowed.

5. The following is a statement of reasons for the indication of allowable subject matter:

The cited art of record fails to teach the dipole antenna comprising a ground plane conductor superimposed and separated from the second conductive element by a second dielectric layer, a third conductive element superimposed and separated from the strips of the second conductive element by the first dielectric layer; and a second conductive via connecting the third conductive element to the ground conductor through the dielectric layers.

Inquiry

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trinh Vo Dinh whose telephone number is (571) 272-1821. The examiner can normally be reached on Monday to Friday from 9:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Trinh Vo Dinh', followed by a long horizontal line.

Trinh Vo Dinh
August 04, 2005